

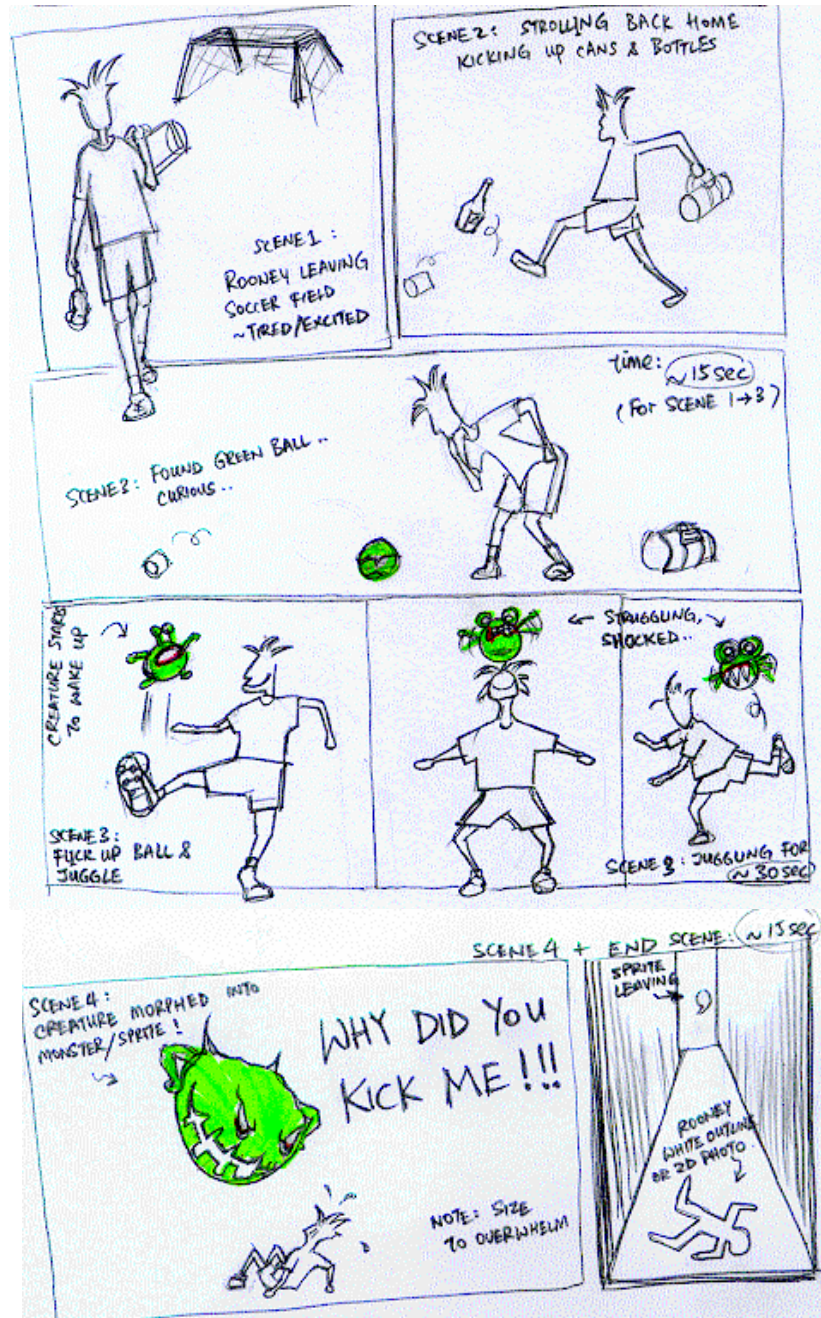
CS5245 Vision and Graphics for Special Effect

Project Progress Report 1

Title: The Ball

Storyboard

The following storyboard guides the development of this short film feature.



Progress Updates

To-date, the team had completed the following tasks:

1) Filming

We have filmed the footages in three parts so as to manage the amount of re-filming due to N.G. shots.

In the first part, Rooney walked through the road and kicked the cans along the road. This is the introduction and no special effect is created here.

In the second part, Rooney found a strange ball, and he began playing with it. He stopped the ball a few seconds later, and the camera zoomed in to the ball. This is when the special effect starts and the ball will start to morph and be replaced by an animated sprite. When the camera zoomed out, Rooney noticed the change in the ball but continued to play with it. Here, the animation will match the motion of the original ball.

In the last part, Rooney got tired playing with the creature, so he gave it a hard kick to the sky. As the ball flew up, the "sprite" will morph into a large monster. Rooney then fell back in shock.

2) Video footages editing and merging

Although we used a stationary camera for the video shoot, there are no exact matching positions and postures of the actor in the 3 consecutive footages.

Hence, it presents some challenges for us to merge the 3 footages seamlessly.

We watched the video over and over again to find a frame in each of the consecutive footages in which Rooney has the most similar gesture. Finally, we produced a continuous video footage that flows quite naturally.

Our current stage of progress:

3) Computer graphics generation

The team member in charge of CG, Yicheng, began to research on how to create the animation required for our film.

4) Motion tracking

The team member in charge of motion tracking, Conrad, began to research on the various motion tracking techniques that may be used.

Technical Challenges

The 2 main technical challenges are:

1) Motion tracking

The object being tracked here is a green ball. In order not to complicate the motion tracking process, a background of a different color is selected for filming. We are now exploring the writing of an algorithm for tracking the movement of the ball. The algorithm should be able to derive the movement of the ball so that the computer animated creature may follow the path of the actual ball.

As the object being tracked is a specific feature of a specific shape (image patch of the ball), a possible algorithm to use is the Lucas-Kanade Algorithm. We will use this algorithm if it proves to be adequate for tracking the movement of the ball

Project Progress Report 1 – The Ball

in our film. Otherwise, we will consider using the Condensation algorithm for motion tracking.

2) *Computer animation and composition with real footage*

As Maya or 3DMax is not available on our personal workstations, we chose a freeware that may function as effectively for our needs. The software we have chosen to use is Blend. Although Blend may be a Java-based software, its speed is good enough for our use.

We will create the animated creature using Blend and create its movement path to coincide with the tracked movement of the ball. Finally, we will compose the animation footage with the actual footage to produce the final film.

(If we have time, we may add in an optional effect of the monster playing some magic and make Rooney's leg gradually disappear)

Updated tasks and responsibilities

1. Video footage production - Both
2. CG effects production - Yicheng
3. Motion tracking - Conrad
4. Composition - Both

Updated Milestones

1. 5 Sep (Completed) - Submit project proposal
2. 12 Sep (Completed) - Complete filming of the required footages
3. 19 Sep (Completed) - Complete pre-processing of the footages
4. 24 Sep (Completed) - Submit progress report
5. 9 Oct - Complete motion tracking
6. 16 Oct - Complete CG creation
7. 22 Oct - Submit progress update
8. 31 Oct - Completion of the final product and prepare for presentation
9. 5 Nov - Presentation

Team members

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